## REMARKS

Claims 1-6, 9-41 are pending in the present application. No additional claims fee is believed to be due.

Claims 7, 8, 42, and 43 are withdrawn without prejudice.

Claims 1, 5, 6, 9, 10, 12, 20, 24, 25, 26, 27, 28, 29, 38, 39, and 40 have been amended to more clearly claim the invention of the present application. Support for the amendment is found in the original claims and specification or in the priority document claims and specification.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

The Office Action states objections to Claims 12 and 38-40 for the following informalities:

Claim 12 recites: $Ti(O^{i}Pr)_4$; the office action suggests amendment to $Ti(OPr)_4$. Applicants have amended Claim 12 as suggested.

Claims 38-40 recite "wherein in", the office action suggests amendment to "wherein". Applicants have amended Claims 38-40 as suggested.

### Rejection Under 35 USC 112, First Paragraph

The Office Action States Claims 20, 21, and 23 are rejected under 35 U.S.C. § 112, first paragraph, for containing heterocycle groups which contain –A=, which are nonenabling when A is either and oxygen or $N(R^8)_1$.

Applicants have amended Claim 20, and thereby dependent Claims 21 and 23 to address the rejection under 35 U.S.C. § 112, First Paragraph.

### Rejection Under 35 USC 112, Second Paragraph

The Office Action States Claims 5, 12, 20, 21, 23, and 36 are rejected under 35 U.S.C. §112, second paragraph as being indefinite and failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 claims the alkyl groups $H_3(CH_2)_n$ and $H_3(CH_2)_j$.

Applicants have amended Claim 5 to clarify the structure, as a carbon atom was omitted.

Claim 12 contains the trademark/trade names "DOWEX 50X8-50", "REILLEX 425", and "AMBERLYST®15".

Applicants have amended Claim 12 to remove reference to trademark/trade names.

Claim 20, 21, and 23 contain heterocycle groups which contain –A=, which are nonenabling when A is either and oxygen or $N(R^8)_1$.

Applicants have amended Claim 20 to address the rejection.

Claim 36 recites the limitation "wherein the mixture produced by step (d)" in line 1, which lacks antecedent basis.

Applicants submit that Claim 31 from which Claim 36 depends, does recite a step (d) and therefore has antecedent basis.

Rejection Under 35 USC 102 Over DE 2,252,186, Beyer et al. and WO 95/13260, Wolf et al.

The Office Action States that Claims 1-7, 12, and 16-23 are rejected under 35 U.S.C. § 102(b) as being anticipated in view of DE 2,252,186 ("Beyer"). Specifically that Beyer discloses a low foaming surfactant with the formula:

$$R^1\text{-}(OC_2H_4)_n\text{-}(OC_3H_6)_m\text{-}O\text{-}CH(CH_3)\text{-}OR^2,$$

wherein $R^1$ is a $C_{7\text{-}22}$ alkyl or alkenyl group, or a mono or bicyclic alkaryl group having $C_{8\text{-}12}$ alkyl group; $R^2$ is a $C_{1\text{-}10}$ alkyl, cyclohexyl, alkylcyclohexyl, or $-(OC_3H_6)_m\text{-}(OC_2H_4)_n\text{-}R^1$; n is 1-30; and m is 5-50. The low foaming surfactant of Beyer is made by reacting a vinyl either of formula III:

$$CH_2{=}CH\text{-}O\text{-}R^2$$

with an alkoxylated alcohol of formula II:

$$R^1\text{-}(OC_2H_4)_n\text{-}(OC_3H_6)_m\text{-}OH$$

in the presence of a catalyst, such as $AlCl_3$ at a temperature between 0-100°C, followed by quenching the mixture with a base, such as KOH or NaOH.

Applicants submit herein a full English translation of DE 2,252,186. Applicants submit that as amended, the claimed invention of the present application claims elements not taught by Beyer. Namely the claimed invention of the present invention defines $R^2$ as being selected from the group consisting of:

(i) a 4 to 8 membered substituted, or unsubstituted heterocyclic ring containing from 1 to 3 hetero atoms; and

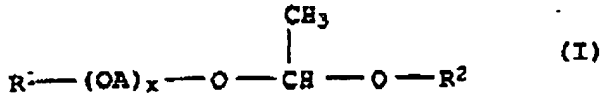
(ii) substituted or unsubstituted, partially unsaturated cyclic or aromatic hydrocarbon radicals having from about 4 to about 30 carbon atoms;

(iii) 7 to 13 membered substituted, or unsubstituted polycyclic ring

(iv) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted 6 carbon radical or a substituted 7 or 8 carbon radical, R is a linear or branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 1 to about 5 carbon atoms; and

(v) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted cyclohexyl radical or a methyl or ethyl substituted cyclohexyl radical, R is a branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 23 to about 30 carbon atoms.

The Office Action States that Claims 1-7, 12 and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated in view of WO 95/13260 ("Wolf"). Specifically that Wolf, discloses a low-foaming, nonionic surfactant composition having the following formula (I)



(I)

in which

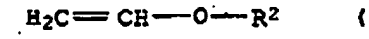
$R^1$ designates a $C_1$ to $C_{30}$ alkyl residue, a $C_3$ to $C_{30}$ alkenyl residue, or a $C_7$ to $C_{30}$ aralkyl or alkaryl residue,

$R^2$ signifies a $C_1$ to $C_{10}$ alkyl residue,

A stands for a 1,2-alkylene group with 2 to 4 C atoms, and

x can assume values of 1 to 50;

prepared by mixing a vinyl ethers of general formula IV



(IV)

with an alcohol alkoxylate of formula III

(III)

in the presence of a Lewis acid catalyst, per the requirements of the instant invention. The Office action further states that Wolf teaches that the reaction temperature is between 30-80 degrees Celsius (page 5, lines 9-16) and that the resulting reaction mixture is neutralized with sodium carbonate (page 10, lines 34-37).

Applicant submit herein a full English translation of WO 95/13260. Applicant submit that the Wolf teaches a process for obtaining formulas (I) and (II) by reacting alkoxylates of general formula III

$$R^1\text{—}(OA)_x\text{—}OH \qquad \text{(III)}$$

with vinyl ethers of general formula IV

$$H_2C\text{=}CH\text{—}O\text{—}R^2 \qquad \text{(IV)}$$

in the presence of acids as catalysts, whereby the process is characterized by the feature that the reaction is carried out in the presence of one or more acetaldhyde dialkylacetals of general formula (V):

$$R^3\text{—}O\text{—}CH(CH_3)\text{—}O\text{—}R^3 \qquad \text{(V)}$$

in which $R^3$ designates a $C_1$ to $C_{10}$ alkyl residue, and whereby $R^2$ and $R^3$ can have the same or different meanings, using quantities of 0.1 to 20 mol of the compounds V per mol of III. See page 6, line 15 – page 7, line 8 of translation.

The present invention does utilize the acetaldehyde dialkylacetals of formula (V) above. Additionally, Applicants submit that as amended, the claimed invention of the present application claims elements not taught by Wolf. Namely the claimed invention of the present invention defines $R^2$ as being selected from the group consisting of:

(i) a 4 to 8 membered substituted, or unsubstituted heterocyclic ring containing from 1 to 3 hetero atoms; and

(ii) substituted or unsubstituted, partially unsaturated cyclic or aromatic hydrocarbon radicals having from about 4 to about 30 carbon atoms;

(iii) 7 to 13 membered substituted, or unsubstituted polycyclic ring

(iv) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted 6 carbon radical

or a substituted 7 or 8 carbon radical, R is a linear or branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 1 to about 5 carbon atoms; and

(v) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted cyclohexyl radical or a methyl or ethyl substituted cyclohexyl radical, R is a branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 23 to about 30 carbon atoms.

Rejection Under 35 USC 103(a) Over Over DE 2,252,186, Beyer et al. and WO 95/13260, Wolf et al.

Claims 1-7, 12, and 16-23 have been rejected under 35 USC §103(a) as being unpatentable over Beyer. Applicants respectfully traverse this rejection for two reasons. First, Beyer does not establish a *prima facie* case of obviousness because it does not teach or suggest all of Applicants' claim limitations. Therefore, Applicants' content that the claimed invention is unobvious and that the rejection should be withdrawn.

Beyer does not teach or suggest all of Applicants' claim limitations and therefore, does not establish a *prima facie* case of obviousness (see MPEP 2143.03). Specifically, Applicants submit that as amended, the claimed invention of the present application claims elements not taught by Beyer. Namely the claimed invention of the present invention defines $R^2$ as being selected from the group consisting of:

(i) a 4 to 8 membered substituted, or unsubstituted heterocyclic ring containing from 1 to 3 hetero atoms; and

(ii) substituted or unsubstituted, partially unsaturated cyclic or aromatic hydrocarbon radicals having from about 4 to about 30 carbon atoms;

(iii) 7 to 13 membered substituted, or unsubstituted polycyclic ring

(iv) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted 6 carbon radical or a substituted 7 or 8 carbon radical, R is a linear or branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 1 to about 5 carbon atoms; and

(v) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted cyclohexyl radical or a methyl or ethyl substituted cyclohexyl radical, R is a branched, saturated or

unsaturated, substituted or unsubsituted aliphatic radical having from about 23 to about 30 carbon atoms.

Claims 1-7, 12 and 16 have been rejected under 35 USC 103(a) as being unpatentable over Wolf. Applicants respectfully traverse this rejection for two reasons. First, Wolf does not establish a *prima facie* case of obviousness because it does not teach or suggest all of Applicants' claim limitations. Therefore, Applicants' content that the claimed invention is unobvious and that the rejection should be withdrawn.

Wolf does not teach or suggest all of Applicants' claim limitations and therefore, does not establish a *prima facie* case of obviousness (see MPEP 2143.03). Specifically, Applicants submit that as amended, the claimed invention of the present application claims elements not taught by Wolf. Namely the claimed invention of the present invention defines $R^2$ as being selected from the group consisting of:

(i) a 4 to 8 membered substituted, or unsubstituted heterocyclic ring containing from 1 to 3 hetero atoms; and

(ii) substituted or unsubstituted, partially unsaturated cyclic or aromatic hydrocarbon radicals having from about 4 to about 30 carbon atoms;

(iii) 7 to 13 membered substituted, or unsubstituted polycyclic ring

(iv) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted 6 carbon radical or a substituted 7 or 8 carbon radical, R is a linear or branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 1 to about 5 carbon atoms; and

(v) substituted or unsubstituted cyclic hydrocarbon radical having from 5 to 30 carbon atoms, wherein when the cyclic hydrocarbon radical is an unsubstituted cyclohexyl radical or a methyl or ethyl substituted cyclohexyl radical, R is a branched, saturated or unsaturated, substituted or unsubsituted aliphatic radical having from about 23 to about 30 carbon atoms.

Double Patenting Rejection

The Office Action has rejected Claims 1-23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting in view of Claims 1-7 of US 6,506,945.

Applicants will submit a terminal disclaimer to overcome the double patenting rejection of Claims 1-23, if and when the Examiner indicates allowable subject matter.

## Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejection under 35 U.S.C. § 112, first paragraph, § 112, second paragraph, § 102(b) and § 103(a). Early and favorable action in the case is respectfully requested.

Applicants have made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicants respectfully request reconsideration of this application, entry of the amendments presented herein, and allowance of Claims 1-6 and 9-41. If, prior to allowance, any outstanding issues exist, Applicants' attorney would welcome the opportunity to resolve such issues via a phone interview.

Respectfully submitted,

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By_____

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